

EPA Superfund Explanation of Significant Differences:

ARSENIC TRIOXIDE SITE

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LIDGERWOOD, WYNDMERE, RUT, ND

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ADMINISTRATIVE RECORD

ESD 7/25/92



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EXPLANATION OF SIGNIFICANT DIFFERENCES

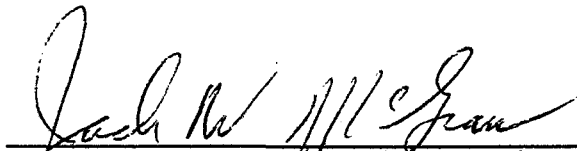
RECORD OF DECISION (ROD) -- ARSENIC TRIOXIDE SITE

FILE PLAN

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DECLARATIONS

Considering the new information that has been developed and the changes that have been made to the selected remedy chosen in the original ROD of September 26, 1986, as modified on February 5, 1988, EPA has determined that the remedy remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate for this initial remedial action, except those for which an interim action waiver was invoked in the original ROD, and is cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.



Jack W. McGraw, Acting Regional Administrator
U.S. Environmental Protection Agency, Region VIII

9/25/92

Date

EXPLANATION OF SIGNIFICANT DIFFERENCES

ARSENIC TRIOXIDE SUPERFUND SITE, NORTH DAKOTA

SEPTEMBER 1992

INTRODUCTION

The purpose of this document is to explain the significant differences between the remedy selected in the Record of Decision (ROD), signed by the U.S. Environmental Protection Agency (EPA) in 1986, and the remedy as implemented at the Arsenic Trioxide Superfund Site (Site) in southeastern North Dakota. The North Dakota State Department of Health and Consolidated Laboratories (NDS DHCL) is the lead agency at the Site and the EPA assists the NDS DHCL as the support agency.

The Site is currently in the remedial action phase of the Superfund cleanup process. Based on new information obtained after the signing of the ROD, the NDS DHCL and EPA have expanded the scope and cost of the remedial action to include the town of Milnor. This change in the remedial action has resulted in the need for this Explanation of Significant Differences (ESD).

Under Section 117(c) of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. § 9617(c), EPA is required to publish an ESD when significant, but not fundamental changes are proposed to the previously selected remedy. The National Contingency Plan (NCP), explains and requires that an ESD be published if a remedial action is taken which differs significantly from the remedy selected in the record of decision in either scope, performance, or cost.

This ESD provides a brief history of the Site, describes the original remedy selected in the ROD, and explains the ways the modified remedy differs from the original. It also provides a summary of the support agency's comments on the changes to the remedy, discusses the modified remedy's compliance with all legal requirements, and provides details on how the reader may obtain more information on the modified remedy.

This document presents only a synopsis of information relating to the Site. This ESD and its supporting documentation will be incorporated into the Administrative Record. The Administrative Record file, is available for public review at the following locations:

- 1) Lidgerwood Library
Municipal Office Building
15 Wiley Avenue
Lidgerwood, North Dakota 58053
Telephone (701) 530-4669
Hours: Monday - Friday, 2:30 pm to 5:00 pm
- 2) North Dakota State Department of Health & Consolidated
Laboratories
Division of Water Quality
1200 Missouri Avenue
Bismarck, North Dakota 58502
Telephone (701) 221-5210
Hours: Monday - Friday, 8:00 am to 5:00 pm
- 3) EPA Superfund Record Center
999 18th Street
Denver, CO 80202
(303) 293-1807
Hours: Mon - Fri: 8:30 am to 4:30 pm

SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEM AND SELECTED REMEDY

SITE HISTORY

The Arsenic Trioxide Superfund Site is located in southeastern North Dakota and covers some 20 townships (approximately 568 square miles), encompassing portions of Richland, Ransom and Sargent counties. This is a sparsely populated, essentially rural, farming area which includes a number of relatively small cities such as Lidgerwood, Wyndmere, and Milnor. The total population living within the Site numbers some 4,500 people.

Site topography consists primarily of low rolling hills and flat plains. Ground water aquifer systems within the Site include the Dakota sandstone aquifer (200 to 1,000 feet below surface), and shallow glacial drift aquifers (3 to 156 feet below surface).

In the 1930's and 1940's, heavy grasshopper infestations of agricultural crops resulted in widespread and frequent application of arsenic-based pesticides. In 1979, routine sampling of ground water as required by the Safe Drinking Water Act (SDWA), discovered that the water supplies for the city of Lidgerwood exceeded the Maximum Contaminant Level (MCL) of 0.05 mg/l for arsenic.

Additional ground water sampling was carried out at private and public water wells in the surrounding communities and rural areas. Elevated levels of arsenic, exceeding or approaching the MCL of 0.05 mg/l, were identified in numerous areas by the Water Supply and Pollution Control Division of the North Dakota State

Health Department. In October, 1981, the North Dakota Arsenic Trioxide Area was proposed for listing on the National Priorities List (NPL) as a Superfund Site. Final listing of the Site on the NPL occurred on September 8, 1983.

In August 1982, a Superfund Cooperative Agreement (CA), was awarded to the NDS DHCL to conduct the remedial investigation (RI) of the Site. In July, 1985, the NDS DHCL was awarded a second Cooperative Agreement to conduct a feasibility study (FS). The final RI report, issued in December, 1985, determined that arsenic contamination appeared to be limited to the shallow glacial drift aquifers and covered approximately 171 square miles. The final FS report was issued in July, 1986.

SUMMARY OF 1986 RECORD OF DECISION

The ROD was issued by EPA on September 26, 1986. The selected remedy called for expanding the existing Richland Rural Water Distribution System to provide safe drinking water to additional residents within Richland's present boundaries and construction of a new rural water treatment and distribution system to provide safe drinking water to affected residents outside of the Richland Rural Water Distribution System boundaries.

The use of institutional controls would be investigated for feasibility and implementability during final design. Some of the institutional controls to be investigated included: 1) restricting existing water well usage, 2) restricting new water well drilling, 3) developing a water well permitting system, and 4) developing economic incentives for encouraging participation in the new distribution system and discouraging use of well water. The economic incentives were found to be feasible and have been implemented. The remainder of the institutional controls are still under consideration for feasibility and implementability.

The remedy selected in the ROD did not include providing water to the of residents of Milnor even though Milnor is located within the areal boundaries of the Site. At the time the ROD was signed, limited ground water quality monitoring had been conducted in the Milnor area. As a result, arsenic contamination of the shallow ground water aquifer beneath or adjacent to the city was not considered to be a problem. In addition, most of the Milnor residents received water from 7 deep wells owned and operated by private water supply companies.

DESCRIPTION OF SIGNIFICANT DIFFERENCES

Additional sampling after issuance of the ROD, identified concentrations of arsenic above the MCL in shallow water wells of some of the residents of Milnor. In 1990, approximately 100 of

the 650 residents of Milnor obtained drinking water from the shallow aquifer. The other 550 residents received their water from one of 7 deep water wells operated by private water supply companies.

In early 1990, the private water supply companies informed the NDSDHCL that they planned to discontinue their services due to the escalating costs of operating these systems. Absent some other water supply company stepping in, which was deemed unlikely, the discontinuing of these systems would force most of the Milnor residents to depend on shallow aquifer wells for their drinking water needs. With this potential development facing Milnor residents, the City of Milnor wrote to the NDSDHCL requesting that Milnor be included in the Arsenic Trioxide Superfund project.

The Bureau of Reclamation (BOR) and the NDSDHCL evaluated the Milnor situation. Based on these evaluations, BOR and NDSDHCL recommended that a water supply distribution system be constructed in Milnor and that this system be connected to the Richland Rural Water Distribution system as part of the Arsenic Trioxide Superfund project. EPA subsequently approved the recommendations that the City of Milnor be included in the Arsenic Trioxide Superfund project.

As a result of the above considerations, EPA and the State of North Dakota amended the Superfund State Contract (SSC) on September 26, 1991, for the North Dakota Arsenic Trioxide NPL Site Remedial Action, Richland Rural Water Treatment Facility, to include the City of Milnor in the remedial action. The addition of a water distribution system for the City of Milnor is considered as a second phase of the Richland Rural Water Project (Operable Unit No. 1).

The purpose of the remedy selected in the 1986 ROD was to reduce human exposure to arsenic-contaminated ground water by providing treated water to households through a rural water distribution system. The addition of Milnor does not alter this original purpose, it only expands the scope and cost of the remedial action. Addition of Milnor is therefore considered a significant but not fundamental change to the original remedy.

Remediation plans for the City of Milnor call for the construction of a 135,000 gallon potable water reservoir, a water distribution system with some 300 service connections and associated pipelines and connection to the Richland Rural Water Treatment facility and distribution system. Estimated project costs for the Milnor water distribution system, adds \$2,400,000.00 to the total cost of the remedial action. Construction plans for the Milnor addition provide for completion during the 1992 construction season (May through November, 1992).

SUPPORT AGENCY COMMENTS

The United States Environmental Protection Agency has reviewed this ESD and has approved the inclusion of the Milnor water distribution system into the North Dakota Arsenic Trioxide Superfund Site. EPA also supports implementation of this remedy as described in this ESD.

STATUTORY DETERMINATIONS

In as much as the changes to the ROD in this particular instance amount solely to the expansion of the original remedy by the addition of the City of Milnor to the rural water distribution system, this modified remedy continues to satisfy all statutory requirements. Considering this addition to the ROD and the changes made to the selected remedy, the NDSDHCL and EPA believe that the remedy remains protective of human health and the environment, complies with Federal and state requirements that are applicable or relevant and appropriate to this remedial action, and is cost effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site.

SCHEDULE FOR ADDITIONAL REMEDIAL WORK

The remedial work resulting from the addition of the City of Milnor to the North Dakota Arsenic Trioxide Superfund Site is scheduled to commence and be completed during the 1992 construction season (May through November, 1992).

NOTICE OF AVAILABILITY

Notice is hereby made that this ESD and its supporting documentation is being made available through the Administrative Record file. The Administrative Record for this ESD is available for review at the Lidgerwood Library, at the NDSDHCL, located in Bismarck, and at the EPA Superfund Record Center in Denver, Colorado.